


SUMMARY OF RECLAMATION ALTERNATIVES

| Item | Laguna Proposal | Preferred Alternative | | | | | | | | | | | | | | | | | | | | |
|---|---|--|----------------------------------|----------|-------|---------------|-------|---------------|-------|-----------------------|-------|--|-----|----------------------------------|----------|-------|---------------|-------|---------------|-------|-----------------------|-------|
| Pit Bottoms | | | | | | | | | | | | | | | | | | | | | | |
| Backfill Levels | Backfill pit bottoms to at least 10 feet above the Dames and Moore (1983) projected ground water recovery levels as indicated below. A schematic diagram is shown in Appendix A (Figure A-4). | Pits would remain as closed basins. Backfill pit bottoms to at least 10 feet above the Dames and Moore (1983) projected ground water recovery levels as indicated below. A schematic diagram is shown in Appendix A (Figure A-1, DOI Proposal). | | | | | | | | | | | | | | | | | | | | |
| | <table><tr><th>Pit</th><th>Proposed Minimum Backfill Levels</th></tr><tr><td>Jackpile</td><td>5939'</td></tr><tr><td>North Paguate</td><td>5958'</td></tr><tr><td>South Paguate</td><td>5995'</td></tr><tr><td>South Paguate (SP-20)</td><td>6060'</td></tr></table> | Pit | Proposed Minimum Backfill Levels | Jackpile | 5939' | North Paguate | 5958' | South Paguate | 5995' | South Paguate (SP-20) | 6060' | <table><tr><th>Pit</th><th>Proposed Minimum Backfill Levels</th></tr><tr><td>Jackpile</td><td>5939'</td></tr><tr><td>North Paguate</td><td>5958'</td></tr><tr><td>South Paguate</td><td>5995'</td></tr><tr><td>South Paguate (SP-20)</td><td>6060'</td></tr></table> | Pit | Proposed Minimum Backfill Levels | Jackpile | 5939' | North Paguate | 5958' | South Paguate | 5995' | South Paguate (SP-20) | 6060' |
| Pit | Proposed Minimum Backfill Levels | | | | | | | | | | | | | | | | | | | | | |
| Jackpile | 5939' | | | | | | | | | | | | | | | | | | | | | |
| North Paguate | 5958' | | | | | | | | | | | | | | | | | | | | | |
| South Paguate | 5995' | | | | | | | | | | | | | | | | | | | | | |
| South Paguate (SP-20) | 6060' | | | | | | | | | | | | | | | | | | | | | |
| Pit | Proposed Minimum Backfill Levels | | | | | | | | | | | | | | | | | | | | | |
| Jackpile | 5939' | | | | | | | | | | | | | | | | | | | | | |
| North Paguate | 5958' | | | | | | | | | | | | | | | | | | | | | |
| South Paguate | 5995' | | | | | | | | | | | | | | | | | | | | | |
| South Paguate (SP-20) | 6060' | | | | | | | | | | | | | | | | | | | | | |
| | | A ground water recovery level monitoring program would be implemented. Additional backfill would be added as necessary to control ponded water. The duration of the monitoring program would be a minimum of 10 years. | | | | | | | | | | | | | | | | | | | | |
| Backfill Material | Would consist of protore, waste dumps H and J, and excess material obtained from waste dump resloping and stream channel clearing. These materials would be covered with 4 feet of shale and 1 foot topsoil (i.e., Tres Hermanos Sandstone or alluvial material). | Would consist of protore, waste dumps H and J, and excess material obtained from waste dump resloping and stream channel clearing. These materials would be covered with 3 feet of overburden and 2 feet of topsoil (i.e., Tres Hermanos Sandstone or alluvial material). | | | | | | | | | | | | | | | | | | | | |
| Stabilization | Reduce all backfill slopes no greater than 3:1. Construct surface water control berms within pit bottoms to reduce erosion and retain soil moisture for plant growth. These areas would then undergo surface shaping, topsoil application and seeding as outlined in the vegetation segment of this table. In addition, surface runoff would be directed to small retention basins in the pit bottoms. Pit bottoms would be contour furrowed. | Reduce all backfill slopes no greater than 3:1. Construct surface water control berms within pit bottoms to reduce erosion and retain soil moisture for plant growth. Surface runoff would also be directed to small retention basins in the pit bottoms. All areas in the pits would then undergo surface shaping, topsoil application and seeding as outlined in the vegetation section of this preferred alternative. | | | | | | | | | | | | | | | | | | | | |
| Post Reclamation Access | Interior fencing (four strand barbed wire) would be constructed to aid in post-reclamation grazing management. | Human and animal access to pit bottoms would be prevented in perpetuity. Livestock grazing would be prevented with the use of sheep-proof fencing due to the uncertainties of predicting radionuclide and heavy metal uptake into plants (forage). | | | | | | | | | | | | | | | | | | | | |
| Costs ^{1/2/} | To backfill the pits 14,250,000 cubic yards of material will be used of which 4,564,300 cubic yards is cover. The cost for this is \$15,995,880. | Same as Laguna Proposal | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| Pit Highwalls | | | | | | | | | | | | | | | | | | | | | | |
| Jackpile Pit Highwall | The top 15' of highwall would be cut to a 45 degree slope. All soil at the top of the highwall would be sloped 3:1. The highwall would be scaled to remove loose debris. A schematic diagram is shown in Appendix A (Figure A-7). | The top 15' of highwall would be cut to a 45 degree slope. All soil at the top of the highwall would be sloped 3:1. The highwall would be scaled to remove loose debris. A schematic diagram is shown in Appendix A (Figure A-7). | | | | | | | | | | | | | | | | | | | | |

TIAL

9404099

POL-EPA01-00040

CONFIDENTIAL CLAIM RETRACTED

DATE: 5/16/13 AUTHORIZED BY: K



9404099

CONFIDENTIAL

POL-EPA01-0004011

SUMMARY OF RECLAMATION ALTERNATIVES (Continued)

| Item | Laguna Proposal | Preferred Alternative |
|----------------------------|--|--|
| North Paguate Pit Highwall | Same measures as Jackpile pit highwall. Additionally, the highwall would be fenced with 6-foot chain link. | The top 15' of highwall would be cut to a 45 degree slope. All soil at the top of the highwall would be sloped 3:1. The highwall would be scaled to remove loose debris. A schematic diagram is shown in Appendix A (Figure A-7). Additionally, the highwall would be fenced with 6-foot chain link. |
| South Paguate Pit Highwall | Same measures as proposed for North Paguate pit highwall. | The top 15' of highwall would be cut to a 45 degree slope. All soil at the top of the highwall would be sloped 3:1. The highwall would be scaled to remove loose debris. A schematic diagram is shown in Appendix A (Figure A-7). Additionally, the highwall would be fenced with 6-foot chain link. |
| Costs | Cost to modify highwalls and install fencing is \$406,350. | Same as Laguna Proposal. |
| <u>Waste Dumps</u> | In general, most dump slopes would be reduced to 3:1, covered with 2 feet of shale, 1 foot of soil and contour furrowed. Dumps which do not have Jackpile sandstone on the surface would not be covered with 2 feet of shale but would be subject to all other requirements. Detailed modifications and treatments are presented in Table 1-4. A schematic diagram is shown in Appendix A (Figure A-10). | Relocate waste dumps H and J to Jackpile pit as backfill. Reduce most dump slopes to 3:1 or less and contour furrow all dump slopes; exceptions are noted in Table 1-4. Dumps which have Jackpile Sandstone on their outer surface and any Jackpile Sandstone exposed during resloping would be covered with 3 feet of overburden and 18 inches of topsoil. Cover dumps that do not contain Jackpile Sandstone on their outer surface with 18 inches of topsoil. Install berms on all dump crests to control erosion. Slightly slope all dump tops away from their outer slopes. Contour dump slopes so their toes are convex to prevent formation of major gullies on slopes. Additional surface treatment is outlined in the vegetation segment of table. Detailed modifications and treatments are presented in Table 1-4. A schematic diagram is shown in Appendix A (Figure A-9). |
| Costs ^{2/} | To modify the waste dumps 18,727,000 cubic yards of material needs to be moved. This will cost \$11,639,400. | To modify the waste dumps 18,727,000 cubic yards of material needs to be moved. In addition, about 1300 hours of dozer work is needed to construct the berms and get proper slopes on the tops of the dumps. This will cost \$11,789,700. |
| <u>Protore Stock-Piles</u> | Use all protore as backfill material in pit areas. Cover with 3 feet of overburden and 2 feet of Tres Hermanos Sandstone or alluvial materials. In addition, all protore would be segregated according to grade. The final location and thickness of the low-grade and high-grade protore would be surveyed and plotted on maps for future reference. | Use all protore as backfill material in pit areas. Cover with 3 feet of overburden and 2 feet of Tres Hermanos Sandstone or alluvial material. |
| Costs ^{2/} | 7,215,000 cubic yards of protore will be moved into the pits. Costs are included in the <u>Pit Bottoms</u> costs. | Same as Laguna Proposal. |

SUMMARY OF RECLAMATION ALTERNATIVES (Continued)

| Item | Laguna Proposal | Preferred Alternative |
|--------------------------------------|--|--|
| <u>Site Stability and Drainage</u> | | |
| Stream Stability | All contaminated soils and fill material within 100 feet of the Rio Paguete west of its confluence with the Rio Moquino would be excavated and relocated to the open pits. For the Rio Moquino, waste dumps S, T, U, N, and N2 would be pulled back 50 feet from the centerline of the stream channel. The toes of these dumps would be armored with riprap. A concrete drop structure would be constructed across the Rio Moquino approximately 400 feet above the confluence with the Rio Paguete. | <p>The stream stabilization designs as indicated below are both feasible, however Option A would be less maintenance dependent than Option B.</p> <p><u>Option A:</u> Remove all material lying within 200 feet of Rios Paguete and Moquino. A concrete drop structure would be constructed across the Rio Moquino approximately 400 feet above the confluence with the Rio Paguete.</p> <p><u>Option B:</u> All contaminated soils and fill material within 100 feet of the Rio Paguete west of its confluence with the Rio Moquino would be excavated and relocated to the open pits. For the Rio Moquino, waste dumps S, T, U, N and N2 would be pulled back 50 feet from the centerline of the stream channel. The toes of these dumps would be armored with riprap. A concrete drop structure would be constructed across the Rio Moquino approximately 400 feet above the confluence with the Rio Paguete.</p> |
| Arroyo Headcutting | Armor arroyos south of waste dumps I, Y and Y2. Stabilization design same as DOI's Proposal. The arroyo on the north side of dumps FD-1 and FD-3 would be relocated to the north to enable the dumps to be regraded to 3:1. | Armor arroyos south of waste dumps I, Y and Y2, and the arroyo west of waste dumps FD-1 and FD-3. Other headcuts encountered during reclamation would also be stabilized by armoring. The preferred stabilization design is shown on Appendix A (Figure A-13). |
| Blocked Drainages | Remove waste dump J and protore stockpiles SP-17BC and SP-6-B to unblock ephemeral drainage on south side of minesite. The drainage north of dump FD-1 would be directed north and west into a reestablished arroyo. The drainage north of dump F would remain blocked. | Remove waste dump J and protore stockpiles SP-17BC and SP-6-B to unblock ephemeral drainage on south side of minesite. Two blocked drainages north of FD-1 and F dumps would remain blocked. Remainder of minesite, excluding open pits, would drain to Rios Paguete and Moquino. |
| Costs | Costs for moving J dump and protore is included in Pit Bottoms costs. Cost for removing material along stream channels are included in Waste Dumps costs. Additional cost for site and stream stabilization is \$861,120. | Option B, Arroyo Headcutting and Blocked Drainages are the same as the Laguna Proposal. The cost for Option A is an additional \$4,400,000. |
| <u>Surface Facilities/Structures</u> | | |
| Lease No 1 (Jackpile Lease) | Demolish and remove all buildings on Lease No. 1 except the Geology building, school building, miner training center and buildings at Old Shop and the Open Pit Offices. Clear land surface (except pit highwalls and natural outcrops) of radiological material (e.g., Jackpile Sandstone) until gamma readings of twice background or less are achieved. Then grade and seed areas. | Demolish and remove all buildings on Lease No. 1 except the Geology building, miner training center and buildings at Old Shop and the Open Pit offices. clear land surface (except pit highwalls and natural outcrops) of radiological material (e.g., Jackpile Sandstone) until gamma readings of twice background or less are achieved. Then grade and seed areas. |

SUMMARY OF RECLAMATION ALTERNATIVES (Continued)

| Item | Laguna Proposal | Preferred Alternative |
|----------------------------------|---|---|
| Lease No. 4 | Leave all structures and facilities associated with P-10 Mine and New Shop, including all buildings, roads, parking lots, sewage systems, power lines and poles. Remove all operational and maintenance equipment, including tools, machinery, supplies and the P-10 conveyor. Clear all permanent structures and land surfaces (except pit highwalls and natural outcrops) of radiological material until gamma readings of twice background or less are achieved. Then grade and seed areas. Remove non-salvageable contaminated buildings and materials to pit for disposal. | Leave all structures and facilities associated with P-10 Mine and New Shop, including all buildings, roads, parking, lots, sewage systems, power lines and poles. Remove all operational and maintenance equipment, including tools, machinery supplies and the P-10 conveyor. Clear all permanent structures and land surfaces (except pit highwalls and natural outcrops) of radiological material until gamma readings of twice background or less are achieved. Then grade and seed areas. Remove non-salvageable contaminated buildings and materials to pit for disposal. |
| Access Routes | Clear 4 major roads within minesite of radiological material and leave after reclamation for post-mining use. These access routes include: 1) access road from P-10 and New Shop to State Highway 279; 2) main road through mine; 3) road that passes between housing area and North Oak Canyon Mesa and then proceeds to P-10; and 4) road to Jackpile Well No. 4. Remove all other roads (except on Lease No. 4), then grade and seed the areas. | Clear 4 major roads within minesite of radiological material and leave after reclamation for post-mining use. These access routes include: 1) access road from P-10 and New Shop to State Highway 279; 2) main road through mine; 3) road that passes between housing area and North Oak Canyon Mesa and then proceeds to p-10; and 4) road to Jackpile Well No. 4. Remove all other roads (except on Lease No. 4), then grade and seed the areas. |
| Water Wells | Leave Jackpile Well No. 4, P-10 Well, New Shop Well and Old Shop Well, and 3 wells and their associated sheltering structures (near housing area). Remove pumps, riser pipe, wiring and water storage tanks. Also leave wells established for future monitoring purposes. Cap all wells to prevent dust, soil and other contaminants from entering well casing. | Leave Jackpile Well No. 4, P-10 Well, New Shop Well and Old Shop Well, and 3 wells and their associated sheltering structures (near housing area). Remove pumps, riser pipe, wiring and water storage tanks. Also leave wells established for future monitoring purposes. Cap all wells to prevent dust, soil and other contaminants from entering well casing. |
| Rail Spur | The rail spur would be left intact and cleared of radiological material until gamma readings of twice background or less are achieved. Demolish Quirk loading dock and haul it to pit. | The rail spur would be left intact and cleared of radiological material until gamma readings of twice background or less are achieved. Demolish Quirk loading dock and haul it to pit. |
| Costs | Costs would be \$232,000. | Same as Laguna Proposal. |
| <u>Drill Holes</u> | All drill holes would be plugged according to the State Engineer's requirements. A 5-foot surface concrete plug would also be placed in each hole. Any cased holes would have the casing cut off at the surface. In addition, areas around drill holes would be seeded. Any exploration roads not wanted by the Pueblo would be reclaimed. | All drill holes would be plugged according to the State Engineer's requirements. A 5-foot surface concrete plug would also be placed in each hole. Any cased holes would have the casing cut off at the surface. In addition, areas around drill holes would be seeded. Any exploration roads not wanted by the Pueblo would be reclaimed. |
| Costs ^{3/} | Cost would be \$20,570 | Same as Laguna Proposal |
| <u>Underground Modifications</u> | | |
| Ventilation Holes | Backfill vent holes with waste material (Dakota Sandstone and Mancos Shale) to within 6 feet of surface. Remove surface casing, install steel support pins in walls of vent holes, and pour 6-foot concrete plug from backfill to surface. Contour and seed areas around vent holes. | Backfill vent holes with waste material (Dakota Sandstone and Mancos Shale) to within 6 feet of surface. Remove surface casing, install steel support pins in walls of vent holes, and pour 6-foot concrete plug from POL-EPA01-0004014 Contour and seed areas around vent holes. |

SUMMARY OF RECLAMATION ALTERNATIVES (Continued)

| Item | Laguna Proposal | Preferred Alternative |
|-----------------------------|--|--|
| Adits and Declines | Construct concrete bulkhead approximately 680 feet below portal of P-10 decline. Backfill decline from bulkhead to ground surface with Dakota Sandstone and Mancos Shale. Place sufficient material over portal to allow for compaction and settling. Shape ground surface above buried portal then top-dress and seed. Bulkhead and backfill Alpine mine entry. Cover mine entries not previously plugged by backfilling. Additionally, bulkhead backfill H-1 mine adits and backfill adits at P-13 and NM-45 mines. | Construct concrete bulkhead approximately 680 feet below portal of P-10 decline. Backfill decline from bulkhead to ground surface with Dakota Sandstone and Mancos Shale. Place sufficient material over portal to allow for compaction and settling. Shape ground surface above buried portal then top-dress and seed. Bulkhead and backfill Alpine mine entry. Cover mine entries not previously plugged by backfilling. Additionally, bulkhead backfill H-1 mine adits and backfill adits at P-13 and NM-45 mines. |
| Costs | Costs for underground modifications would be \$39,550. | Same as Laguna Proposal. |
| <u>Revegetation Methods</u> | | |
| Top dressing | A minimum of one foot of topsoil would be placed on all disturbed areas. Additional soil for the northern portion of the mine would be obtained from the relocation of the arroyo on the north side of dump FD-1 and from a borrow site along the Rio Moquino immediately north of dumps S and T. Additional soil for the southern portion of the mine would be obtained from a borrow site southeast of dumps J and H. | Following final sloping and grading, top dress pit bottoms with 24", waste dumps with 18", and all other areas within the minesite with 12" of material composed primarily of Tres Hermanos Sandstone (stockpiled at three locations within minesite). In order to meet top dressing volume requirements for the northern portion of the minesite, obtain additional material from topsoil borrow material located east of J and H dumps may be needed. Following topsoil removal, contour disturbed borrow area, then fertilize, seed and mulch. |
| Surface Preparation | Soils would be conditioned by disking, mulching and adding soil nutrients as necessary. All slopes steeper than 5:1 would be contour furrowed. | After applying top dressing, fertilize areas to be planted, followed by disking to a depth of 8 inches and then contour furrow. |
| Seeding and Seed Mixtures | In most situations, plant seed mixture with rangeland drill. Broadcast seeding combined with hydromulching may be used on inaccessible sites or if determined to be more feasible than drilling. For both methods, seed mixture would consist mainly of native plant species possessing qualities compatible with post-grazing use and adapted to local environment. Following drill seeding, apply straw mulch at about 2 tons per acre, and crimp into place with a notched disk. Before seeding operations begin, fence entire minesite to prevent livestock grazing. | Before seeding operations begin, fence entire minesite to prevent livestock grazing. In most situations, plant seed mixture with rangeland drill. Broadcast seeding combined with hydromulching may be used on inaccessible sites or if determined to be more feasible than drilling. For both methods, seed mixture would consist mainly of native plant species possessing qualities compatible with post-grazing use and adapted to local environment. Following drill seeding, apply straw mulch at about 2 tons per acre, and crimp into place with a notched disk. |
| Revegetation Success | Vegetation would be monitored and supplemented until the density and percent cover of the revegetated areas equals or exceeds 90 percent of the species density and cover of existing comparison test plots. Data would be collected for a minimum of 3 years following completion of reclamation. | Using the Community Structure Analysis (CSA method), plant establishment would be considered successful when revegetated sites reach 90 percent of the density, frequency, foliar cover, basal cover and production of undisturbed reference areas (but not sooner than 10-year monitoring period). If unsuccessful trend is shown retreatment may be necessary to achieve success criteria. In the pit bottoms, vegetation would be sampled annually for radionuclide and heavy metal uptake. |
| Costs | 3,070,000 cubic yards of topsoil ^{4/} material plus top dressing and revegetation will cost \$4,058,070. | 3,082,220 cubic yards of topsoil ^{5/} material plus top dressing and revegetation will cost \$5,310,000. POL-EPA01-0004015 |

| Item | Laguna Proposal | Preferred Alternative |
|-------------------------------|--|--|
| <u>Monitoring</u> | Monitoring would be broken down into three phases: 1) monitoring during reclamation, 2) monitoring during reclamation, and 3) long-term monitoring. Refer to Table 1-5 for details of the Pueblos proposed monitoring program. | The monitoring period would vary for each parameter. Monitoring activities to be continued would include: meteorologic sampling, air particulate sampling, radon sampling (ambient), radon exhalation sampling, gamma survey, soil and vegetation sampling, water monitoring and subsidence. In addition, the monitoring program would be expanded to include: radon daughter levels (working levels) in any remaining mine buildings and ground water recover levels/salt build-up in the open pits. The ground water monitoring period would be of sufficient duration to determine the stable future water table conditions. Refer to Table 1-5 for details of the preferred monitoring plan. |
| Costs | Monitoring for the minimum amount of time, from 6 to 8 years, would cost \$2,700,000 to \$3,600,000. | Monitoring for the minimum amount of time (about 15 yrs) would cost \$6,750,000. |
| <u>Security</u> | Anaconda would continue to have full responsibility for mine access and security during reclamation and monitoring activities. However, security during monitoring phase would require cooperation from Pueblo of Laguna and BIA to prevent livestock grazing on revegetated sites. | Control of minesite access and security would continue during reclamation and monitoring activities. However, security during monitoring phase would require cooperation from Pueblo of Laguna and BIA to prevent livestock grazing on revegetated sites. |
| Costs ^{6/} | Security to end of monitoring would cost \$1,500,000. | Security to end of monitoring would cost \$2,250,000. |
| <u>Compliance</u> | BLM and BIA would monitor and inspect every aspect of reclamation activities to ensure compliance with all reclamation requirements. | DOI would monitor and inspect every aspect of reclamation activities to ensure compliance with all reclamation requirements. |
| Costs | Compliance costs for BLM and BIA would be \$525,000 through the end of monitoring. | Compliance costs for BLM and BIA would be \$600,000 through the end of monitoring. |
| <u>Reclamation Completion</u> | Reclamation would be considered complete when revegetated sites reach 90 percent of the density, frequency, foliar cover, basal cover and production of undisturbed reference areas minimum of 3 years would be required before determining if vegetative success criteria were met. Although intensive minesite monitoring could end as little as three years after completion of reclamation operations, long-term monitoring and maintenance of site stability could continue indefinitely. In addition, gamma radiation levels must be no greater than twice background over the entire minesite. Outdoor radon - 222 concentrations must be no greater than 3pCi/l. Radon daughter levels (working levels) in any remaining surface facilities must not exceed 0.03 WL. | Reclamation would be considered complete when revegetated sites reach 90 percent of the density, frequency, foliar cover, basal cover and production of undisturbed reference areas (but not sooner than 10 years following seeding). In addition, gamma radiation levels must be no greater than twice background over the entire minesite. Outdoor radon - 222 concentrations must be no greater than 3pCi/l. Radon daughter levels (working levels) in any remaining surface facilities must not exceed 0.03 WL. |
| | \$7,000,000 in contingency funds will be available to mitigate any unforeseen events. ^{7/} | No contingency fund. POL-EPA01-0004016 |

SUMMARY OF RECLAMATION ALTERNATIVES (Concluded)

| Item | Laguna Proposal | Preferred Alternative |
|-----------------------------------|---|---|
| <u>Post-Reclamation Land Uses</u> | | |
| | Livestock grazing, light manufacturing, office space, mining and major equipment storage. Specifically excluded are habitation and farming. | Limited livestock grazing, light manufacturing, office space, mining and major equipment storage. Specifically excluded are habitation and farming. |
| Costs | There will be \$500,000 in a long-term mitigation fund. | No mitigation fund proposed. |
| Total Cost | \$37,462,940 to \$38,352,940 (Does not include contingencies) | A 45,871,610 (Neither option includes compliance - DOI internal cost) B 41,471,610 |

General Comments

- Volumes used to calculate costs for Laguna Proposal and Preferred Alternative were those used by Jacobs Engineering Group (except for topsoil needs for Preferred Alternative). Jacobs used BLM's volumes for waste dump slope modifications the BLM/Anaconda prototype volumes, and Anaconda's pit volumes (which are larger than BLM's).
- Costs were based on costs used in DEIS.
- Costs were based on five years for reclamation work.

Pit Backfill

- Volume of material to back fill is from Jacobs. This figure includes prototype and overburden from waste dump slope modification. The yards of material to be moved into the pits is greater than the backfill needs.
- Pit backfill cost figures are comparable to costs in DEIS.

Highwalls

- The figure for highwall stabilization is less because Gavilan Mesa highwall is not to be buttressed.

Waste dump Resloping (Laguna and Preferred Alternative)

- The figure for resloping is substantially lower because:
 1. Less material is being moved during stream channel modification (Laguna and Option B), and resloping of South dump.
 2. Where possible, toes of dumps will be moved out even if undisturbed ground is covered.
 3. Thus, material to be moved will be moved with scraper and dozer as compared to truck haulage in DEIS.

Revegetation

- According to BLM volumes, there are 3,082,200 cubic yards of topsoil material (Tres Hermanos Sandstone) in four dumps. This is the volume needed to cover all disturbed areas with a minimum two feet of topsoil.
- According to Jacobs, to meet the needs of the Laguna Proposal 3,070,000 cubic yards of topsoil will be used. Because Jacobs used BLM's volumes they are probably planning to spread this much topsoil even though it will exceed their minimum requirement.

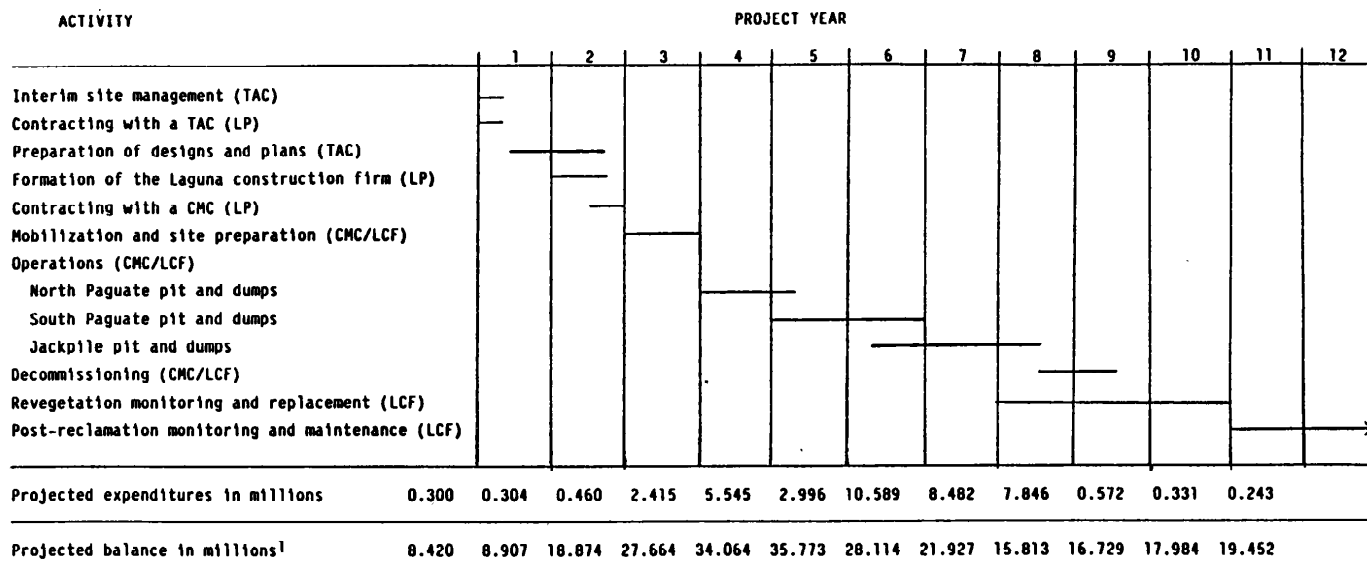
Monitoring

- Monitoring costs were based on an expanded Anaconda monitoring program.
- For the Laguna Proposal, the costs were based on a minimum monitoring period of ten years (starting at the beginning of reclamation).
- For the Preferred Alternative the costs were based on a minimum monitoring period of fifteen years (starting at the beginning of reclamation).

Footnotes

- 1/Laguna Proposal and Preferred Alternatives have the same yardage and costs because the material to be backfilled is in excess of the needs.
- 2/Costs for placing topsoil is included in revegetation costs.
- 3/Costs for an estimated 2300 drillholes.
- 4/Figure for topsoil needs from Jacobs Engineering Group, Inc.
- 5/Figure for topsoil needs from BLM.
- 6/24 hour security with one guard on duty.
- 7/\$5,000,000 in a contingency fund and \$2,000,000 in a groundwater mitigation fund. If funds not met monies would revert to Pueblo of Laguna.
- 8/Costs for ground water monitoring is included in monitoring section.

PRELIMINARY SCHEDULE



¹Assumes a 6 percent net rate of return

Figure 1

CONFIDENTIAL

POL-EPA01-0004018